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An

Inaugural Dissertation

on

Hydrocephalus Acutus.

Submitted

to the

Paper March 9th

Examination

1827

of the

Trustees and Medical faculty,

of the

University of Pennsylvania;

For

The Degree

of

Doctor of Medicine,

by

Samuel A. Barton.

Nov. 1826

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Hydrocephalus Acutus.

This disease may be strictly ranked among those, which are designated by the title of *epilepsia Medicorum*; and one, which has occupied the attention of some of the most able Medical Authors, and has been investigated with that accuracy of observation and minuteness of research, particularly characteristic of those, whose names stand high in the Annals of Medical Science; but the melancholly instances that occur daily, evince their labours have not been attended with success, and that its true pathology yet remains in obscurity, and we may look forward to some more fortunate, and

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perhaps American, practitioner, to immortalize himself, by establishing a true theory, relative to its pathology, and a correct mode of treatment.

In the present instance I shall not presume to offer much original matter, but shall give a detail of certain facts admitted by authors, and the most approved plan of treatment.

Though Hydrocephalus Infantum is generally divided into acute and chronic, yet in this essay I shall only consider the acute form.

The Aetiology of this disease is generally involved in considerable obscurity; frequently however it may be traced to some external injury done to the head, as from falls; blows

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Or to some great and long continued irritation; as if dentition; worms in the alimentary canal; collections of acid faces, from long continued constipation; schischus tumours or excrescences within the skull; an original laxity or weakness in the brain, may sometimes have produced it.

It mostly attacks children; and females about commencing menstruation appear to be more subject to it, than at any subsequent period.

In fact it is rare for it to commence an attack after twelve or fourteen years of age. Professor Chapman however, relates a case, which fell under his own observation, of a lady, who upon removing to the country, had caught a severe cold, about commen-

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-ing, or rather at the period of menstra-
 -ation; The flow was checked, and she
 experienced a violent, attack of the dis-
 -ease. In children, when the head has
 received no injury, the same professor
 believes it to have, as well as most
 -other infantile diseases, its origin in
 the *prima via*; That this is highly
 probable, there are the strongest rea-
 -sons for believing; for neither we be-
 -lieve with Rush, that in the first-
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 it is owing to inactivity or torpor of
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 we ask the question, why this action

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approximating Phrenitis? or why this
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we are as much at a loss for an an-
swer as we were before granting the
admissions.

It is not sufficient to refer
it in all, or in a majority of cases
to "original laxity or weakness of the
brain", because we see the most ro-
bust and healthy children attacked
with it; while others, when there is evidence
of general "laxity and debility", pass through
the several stages of Trifolium and -
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laxity and debility cannot exist
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But in a great majority of cases, there is no evidence of this state of the system, and consequently something more, would seem necessary for its production.

It is said that those of a scrupulous or richety habit, T seem more disposed to it than others, but if this be a fact, as it probably may be, it still does not argue that this habit is absolutely necessary for its production; else we should not find it in others of a contrary habit; nor (perhaps the inference is not a fair one) should we find any who might possess this constitution escape it.

Therefore something more seems necessary to account for it. F

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In very many cases of dis-
 sections, not a vestige of diseased
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Taking it for granted then, that in perhaps a great majority of cases, its cause is to be sought after in the alimentary canal, I proceed to enumerate its Symptoms;

The progress has been divided into three stages. The first, mostly commences with the usual symptoms of Dyspepsia; at 1st the patient is dull and languid; loss of appetite or it is variable; bowels costive; abdomen tumid and flatulj; nausea and sometimes vomiting; eyes look dull and frequently are of a dark colour under the lids; the skin is observed to be hot and dry towards evening; soon after these symptoms have appeared, the patient becomes affected with sharp head-ache, chiefly in the fore part, or, if not

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then, generally in the crown of the head; it is sometimes however confined to one side of the head, and in that case, when the position of the body is such, the head often inclines to the side affected; we must generally find also, that the headache alternates with the affection of the stomach, the vomiting being less troublesome, when the pain is most violent, and vice versa: Other parts of the body are likewise subject to temporary attacks of pain, viz. the extremities, or the bowels, but more constantly the back of the neck.

Almost the first symptom observed in children, is a chill, soon succeeded by fever of a remitting form, with evening exacerbations: there is aversion to light and sound;

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Picking of the nose when awake:
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Many of these symptoms are not observable in every case; most generally the countenance of the patient is anxious and strongly expressive of distress and suffering. The temper is irritable and "flicking"; inclined to lay in bed, and be in a recumbent position, and is averse to being moved: it rolls its head from side to side, and throws its arms over it: when asleep particularly its breathing is extremely irregular, with frequent sighs, starts often and screams as if terrified: the limbs are obstinately castive generally, though sometimes they have a tendency to looseness: the appearances of the discharges are remarkable, being mostly of a dark

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green colour, having an oily appearance, very different from the slime which accompanies worms, with a peculiar heavy, cadaverous smell.

When the above mentioned symptoms have continued for a few days, though subject to great fluctuation, the axis of one eye is generally found turned in towards the nose; the pupil on this side is rather more dilated than the other, and when both have their axis directed inwards, (which sometimes happens,) both pupils are larger than they are observed to be in the eyes of a healthy person; delirium of the most violent kind, particularly if the patient has arrived at the age of puberty, now takes place, and with all the —

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preceding symptoms of fever, continues for a while to increase, until about four or five days, after a much shorter space of time, after the first symptoms make their appearance.

The disease then undergoes a remarkable change, and symptoms become manifest, which point the commencement of the second stage. The pulse becomes slow and unequal, the pupils of the eyes are dilated and do not contract upon exposure to light; there is great diminution of sensibility; the child lays in a lethargic or torpid state; starts and screams frequently, without any apparent cause; its sleep very much disturbed, and the bowels are still obstinately constipated, or else they

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become very irregular, with thin watery stools, mixed with scybala of an oily appearance; it has too, a vague wild look, with perhaps double vision.

If any artificial effort proves unavailing in exciting the sinking powers of life, then other symptoms make their appearance, which denote the 3^d stage, and more certainly announce the approach of death.

In this stage the pulse returns again to its feeble state, being very quick and variable; coma, convulsions, or something similar to chous: jerking of the extremities; he lies in a torpid state, tossing his hands over his head or sawing the air: sometimes red spots or blotches appear on the body and limbs; deglutition

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In this stage, there is no difficulty in discriminating it.

The only disease it can be confounded with, is *febris puminea*; but they may be distinguished by several symptoms: In worm fever there is a remarkable alteration of the voice, with sometimes complete aphonia. This, says Professor Chapman, may serve as a diagnosis between the two affections.

In worm fever the macubulae is marked by a stupor and the emission, by a morbid vigilance.

In *Hydrocephalus*, children cannot bear the erect position, if raised they scream out so furiously, as to have obtained it the name of —

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In the first stages the symptoms are illusory; dissections frequently showing not a drop of water in the ventricles of the brain, when pus has been hid with all, or many of the symptoms characteristic of the disease; and in other cases the ventricles have been found full, when not a symptom led to suspect it.

The prognosis is generally unfavourable, or it is to be regarded as a disease of difficult cure, unless attacked promptly and decisively in the first onset.

If the patient can't bear the erect position, this a bad symptom. Scurfs which may occasionally be taken for stupor: great dilatation

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of pupils, and squinting are very unfavourable: apoplectic stupor; coma; difficult respiration; weak intermitting pulse; involuntary evacuations, are all highly unfavourable.

Post mortem examination shows accumulations of water in the ventricles of the brain, which is much clearer and of a purer colour, than that in Hydrothorax or ascites.

Sometimes containing a small quantity of coagulable lymph, but much frequently not.

When the accumulation is great, the substance of the brain appears to be a sort of pulpy bag containing a fluid.

Des Gall and Spengheim have frequently dissected the brain of Hydrocephalic patients, and have asserted, it

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exactly resembles a cloth bundled up together, and by careful dissection may be drawn out in form of a bag; and hence in Chronic Hydrocephalus, when the brain appears despoiled, it is only drawn out of its convolutions, and in that state is as capable of performing its functions, as when in its ordinary state.

It is stated as a curious fact that Hydrocephalic patients retain the senses and powers of mind equally undiminished as in health.

In some cases, when the collection is not great, the substance of the brain appears hard and indurated, in others soft; the veins on the surface of the membranes of the brain, and on those lining the ventricles are gorged with dark blood; with thickening of the tissues,

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Attacking the disease with boldness and promptness, in the incipient stage, it may generally be cured, though some authors maintain it to be a most intractable disease, and Dr. Monro, of Edinburgh, avowed as he has not been so fortunate as to cure it in a solitary instance; and on the contrary, authors of equally high authority, consider it one of the most curable diseases.

The explanation of this discrepancy, perhaps, may not be difficult; If remedial measures are not applied, until effusion has taken place, they must fail of curing it.

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But if attacked previous to effusion having taken place, we may prevent it, and in most cases cure the disease.

Purgative is most frequently resorted to in the commencement, but by some is considered inferior to purging: the plan recommended is to keep up a constant action of the bowels, by the exhibition of calomel and Salap. day after day, or as some prefer, give calomel at night, and purge it off next morning, with some or other active cathartics: though in conjunction with cathartics, blood-letting ought not to be neglected, when increased arterial action exists, with throbbing of the temporal arteries, and should be aided, by cups and leeches and cold applications, and likewise

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Emetics by some are spoken favorable of, and in some cases are said to be an important remedy; but they require some discrimination in their exhibition: where there is throbbing of the temporal arteries, or evidently a violent determination to the head, they are altogether inadmissible.

After the disease has continued for some time, it is not uncommon for the symptoms to mitigate, so as to give hopes of recovery; but this is a fatal calm; effusion has now taken place, and consequently terminates mostly fatal:

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to be depended upon, and may be given internally and rubbed externally, and under this plan of treatment, some patients have been cured when every evidence of effusion having taken place, has been manifest.

Professor Chapman in conjunction with the late Dr. Huxley, succeeded in curing a child, when every symptom of the last stage of the disease had made its appearance, by introducing mercury into the system to a moderate salivation, though it required an immense quantity to obtain the cure.

And in conjunction with the late Dr. Whistler, he succeeded in another case, by the same treatment.

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extreme cases, when death must inevitably take place without the application of the remedy.

What would be the effect of purging with some of the most drastic cathartics, and producing an irritation in the alimentary canal, amounting almost to inflammation? by becoming a centre of fluxion, it would probably relieve the vessels of the head: but I confess it wants confirmation, as it is with me a mere suggestion.

I shall now conclude ~~with~~ the History and treatment of this disease, and shall only further observe, that the views I have taken of its pathology, I derived from the Effluvia of Prostitutes; and, from a thorough examination of medical authors,

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